



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

AMERICAN JOURNAL OF BOTANY

OFFICIAL PUBLICATION OF THE
BOTANICAL SOCIETY OF AMERICA

EDITORIAL COMMITTEE

F. C. NEWCOMBE, Editor-in-Chief
University of Michigan

C. STUART GAGER, Business Manager
Brooklyn Botanic Garden

IRVING W. BAILEY
Bussey Institution

H. H. BARTLETT
University of Michigan

A. S. HITCHCOCK
Bureau of Plant Industry

L. R. JONES
University of Wisconsin

EDGAR W. OLIVE
Brooklyn Botanic Garden

VOLUME III—1916

WITH TWENTY-FOUR PLATES AND NINETY-FOUR TEXT FIGURES

PUBLISHED

IN COOPERATION WITH THE BOTANICAL SOCIETY OF AMERICA

BY THE

BROOKLYN BOTANIC GARDEN

AT 41 NORTH QUEEN STREET, LANCASTER, PA.

Reprinted with the permission of the original publisher

JOHNSON REPRINT CORPORATION

NEW YORK AND LONDON

TABLE OF CONTENTS, VOLUME III, 1916

NO. 1, JANUARY

	PAGE
Physiological observations on alkaloids, latex and oxidases in <i>Papaver somniferum</i>	
RODNEY H. TRUE AND W. W. STOCKBERGER	I
Notes on the anatomy of Peridermium galls (with one text figure and plate I).....	12
ALBAN STEWART	
The climatic distribution of certain types of Angiosperm leaves.	
IRVING W. BAILEY AND EDMUND W. SINNOTT	23
A Gymnosporangium with repeating spores (with one text figure).	
J. C. ARTHUR	39

NO. 2, FEBRUARY

The exchange of ions between the roots of <i>Lupinus albus</i> and culture solutions containing three nutrient salts (with three text figures). RODNEY H. TRUE AND HARLEY H. BARTLETT	47
On the identity of Blanco's species of <i>Bambusa</i> ... E. D. MERRILL	58
The region of greatest stem thickness in <i>Raphidophora</i> (with one text figure).....	65
FRANK C. GATES	
The mechanism of movement and the duration of the effect of stimulation in the leaves of <i>Dionaea</i> (with one text figure).	
WILLIAM H. BROWN	68

NO. 3, MARCH

The specificity of proteins and carbohydrates in relation to genera, species and varieties.....	91
EDWARD TYSON REICHERT	
Mechanics of dormancy in plants.....	99
WILLIAM CROCKER	
The periodicity of freshwater algae (with three text figures).	
EDGAR NELSON TRANSEAU	121

NO. 4, APRIL

The morphology and affinities of <i>Gnetum</i> (with plates II-VII).	
WALTER P. THOMPSON	135

Notes on the distribution and growth of North Dakota Cuscutae (with twelve text figures).....	O. A. STEVENS	185
Lysichiton camtschatcense (L.) Schott, and its behavior in sphagnum bogs (with five text figures).....	GÖTE TURESSON	189

No. 5, MAY

Significant accuracy in recording genetic data.....	E. M. EAST	211
Relation of oxidases and catalase to respiration in plants.		
	CHARLES O. APPLEMAN	223
Influence of certain salts and nutrient solutions on the secretion of diastase by <i>Penicillium Camembertii</i> (with three text figures).....	WILLIAM J. ROBBINS	234

No. 6, JUNE

The archegonium and sporophyte of <i>Treubia insignis</i> Goebel (with six text figures)....	DOUGLAS HOUGHTON CAMPBELL	261
The orientation of primary terrestrial roots with particular re- ference to the medium in which they are grown (with seven text figures.).....	RICHARD M. HOLMAN	274
A study of development in the genus <i>Cortinarius</i> (with one text figure and plates VIII-XIII).....	GERTRUDE E. DOUGLAS	319

No. 7, JULY

The development of the <i>Phylloxera vastatrix</i> leaf gall (with five text figures and Plates XIV and XV)..	HARRY R. ROSEN	337
Correlations between morphological characters and the saccharine content of sugar beets (with eight text figures).		
	FREDERICK J. PRITCHARD	361
Mutation in <i>Mattiola annua</i> , a Mendelizing species (with three text figures).....	HOWARD B. FROST	384
The growth of forest tree roots.....	W. B. McDOUGALL	384

No. 8, OCTOBER

The angular micrometer and its use in delicate and accurate mi- croscopic measurements (with four text figures).		
	HOWARD E. PULLING	393
Influence of the medium upon the orientation of secondary ter- restrial roots (with three text figures).	RICHARD M. HOLMAN	407
The anatomy and phylogenetic position of the Betulaceae (with plates XVI-XIX).....	CARL S. HOAR	415

The toxicity of bog water.....	GEORGE B. RIGG	436
On the osmotic pressure of the tissue fluids of Jamaican Loranthaceae parasitic on various hosts (with two text figures). J. ARTHUR HARRIS AND JOHN V. LAWRENCE		438
Four-lobed spore mother cells in Catharinea (with two text figures).....	CHARLES E. ALLEN	456
The wandering tapetal nuclei of Arisaema (with eight text figures and plate XX).....	F. L. PICKETT	461
Two types of variable pubescence in plants.....	P. L. RICKER	470
The seaweeds of Hawaii.....	VAUGHAN MACCAUGHEY	474

NO. 9, NOVEMBER

Specific action of barium.....	W. J. V. OSTERHOUT	481
Studies on exosmosis (with four text figures).....	S. C. BROOKS	483
Effect of environmental conditions upon the number of leaves and the character of the inflorescence of tobacco leaves (with plates XX-XXIII).....	H. A. ALLARD	493
Oenothera mutants with diminutive chromosomes (with seven text figures and plate XXIV).....	ANNE M. LUTZ	502

NO. 10, DECEMBER

The Uredinales found upon the Onagraceae (with one text figure). G. R. BISBY		527
A study of permeability by the method of tissue tension (with three text figures).....	S. C. BROOKS	562
Osbeck's Dagbok Öfwer en Ostindsk Resa.....	E. D. MERRILL	571
Index to Volume III.....		589
(Dates of publication: No. 1, Feb. 5; No. 2, Mar. 4; No. 3, Apr. 18; No. 4, May 8; No. 5, May 26; No. 6, July 17; No. 7, Aug. 11; No. 8, Oct. 20; No. 9, Dec. 23; No. 10, Jan. 8, 1917.)		

Please insert p. v. in Table of Contents, accompanying December number (Am. Journ. Botany 3: No. 10, 1916).